

---

# THERE IS NO LARGEST PRIME NUMBER

---

Euclid of Alexandria

`euclid@irob.uni-obuda.hu`

December 10, 2020  
Budapest

**ÓBUDA UNIVERSITY**  
**ANTAL BEJCY CENTER FOR**  
**INTELLIGENT ROBOTICS**



- ① Newest results of Euclid:  
*There Is No Largest Prime Number*
- ② Examples for figures/mathematical formulas
- ③ How to manipulate vertical spaces
- ④ How to create a printable/annotate handout from the presentation
- ⑤ Example for animations
- ⑥ Language options
- ⑦ "Thank you for attention!" frame

# THERE IS NO LARGEST PRIME NUMBER

THE PROOF USES *reductio ad absurdum*.



## THEOREM: NO LARGEST PRIME NUMBER

There is no largest prime number.

- 1 Suppose  $p$  were the largest prime number.

# THERE IS NO LARGEST PRIME NUMBER

THE PROOF USES *reductio ad absurdum*.

## THEOREM: NO LARGEST PRIME NUMBER

There is no largest prime number.

- 1 Suppose  $p$  were the largest prime number.
- 2 Let  $q$  be the product of the first  $p$  numbers.

# THERE IS NO LARGEST PRIME NUMBER

THE PROOF USES *reductio ad absurdum*.

## THEOREM: NO LARGEST PRIME NUMBER

There is no largest prime number.

- 1 Suppose  $p$  were the largest prime number.
- 2 Let  $q$  be the product of the first  $p$  numbers.
- 3 Then  $q + 1$  is not divisible by any of them.

# THERE IS NO LARGEST PRIME NUMBER

THE PROOF USES *reductio ad absurdum*.



## THEOREM: NO LARGEST PRIME NUMBER

There is no largest prime number.

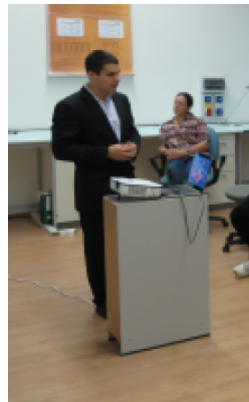
- ① Suppose  $p$  were the largest prime number.
- ② Let  $q$  be the product of the first  $p$  numbers.
- ③ Then  $q + 1$  is not divisible by any of them.
- ④ But  $q + 1$  is greater than 1, thus divisible by some prime number not in the first  $p$  numbers.



FIGURE: Example for simple figure

The ABC Center for Intelligent Robotics is devoted to promote the scientific and technological advancement of robotics, primarily for service applications.

The ABC Center for Intelligent Robotics was created as a primary reply to the rising demand of integrated education and application-oriented development in robotics. It is an independent platform within the Óbuda University, extensively relying on a national and international network of key partner institutions and companies in Europe and North America, predominantly.







(a) Subfigure 1 caption



(b) Subfigure  
2 caption



(c) Subfigure  
3 caption

FIGURE: Global figure caption

A "multiline":

$$1 + 1 +$$

$$1 + 1 + 1 = 5 \quad (1)$$

An "align\*":

$$1 = 1$$

$$1 + 1 = 2$$

$$1 + 1 + 1 = 3$$

An "equation\*" in a "block"

## PRODUCT

It is easy to see that

$$\sum_{n=1}^N 1 = N$$

Previous environments are defined with much space before/after them. It can be avoided by using inline equations via  $\$ \$$ ,

or commands like `\vspace{-2mm}`.

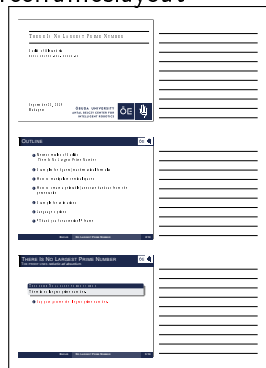
(With positive arguments the space can be increased.)

By applying "handout" optional argument as  
`"\documentclass[handout]beamer":`  
 the "`\pause`" comments will not be taken into account

You can also create a printable form, where three frames are placed  
 into one A4 page by using the command "`\threeframeslayout`"

(In this case, the  
 "thankyouforattentionframe" is omitted  
 to save paper.)

It is recommended to use it with the  
 [handout] option, the result is depicted  
 on the right side



The animate package provides opportunity to embed animation into the pdf presentation as


For more details, see its documentation:

<http://mirrors.nxthost.com/ctan/macros/latex/contrib/animate/animate.pdf>.

# ANIMATION COMPATIBLE WITH THE THREEFRAAMESLAYOUT

A modified animate package is included, that support the threeframeslayout option, if you declare where the animation must be placed: 'top', 'center' or 'bottom'

The previous animation does not appear in the annotable output, but the next one will be placed appropriately:

The BARK logo and the footline appear automatically only if there is frametitle defined. 

If it is not defined the `\showfootline` and `\showlogo` commands can be used to show them – if they are needed – as in this frame.

The footline shows the so called shorttitle and shortauthor if they are given (as `\title[A shorttitle]{A title}`, `\author[Shortauthors]{Authors}`) or the title / author if they are not (as `\title{A title}`, `\author{Authors}`).

The font type of titles on the titleframe can be set by applying command: `\resettitlefonttype{cmss}`

The font type of title/author/framenummer on normal frames can be set with the command: `\resetframetitlefonttype{cmss}`

For more details about available latex fontfamilies, see [https://www.sharelatex.com/learn/Font\\_typefaces](https://www.sharelatex.com/learn/Font_typefaces) (E.g.: phv/cmss/lmbh...)



By using `\usepackage[magyar]{babel}` the logos, date format and thanks appear in hungarian,

by applying other options, as `\usepackage[english]{babel}` they are in english.

Finally the next dia shows the result of the defined `\thankyouforattentionframe{The research was supported by...}` command.



# Thank you for attention!

The research was supported by GP's & my free time. This very very very very long text is only to check the size of this textbox...

By the way, the theme is based on the Warsaw beamer theme of Till Tantau.

Best regards, J. Kuti